

62-7.41 (73)

RIVERS AND FLOODS.

By H. C. FRANKENFIELD, Meteorologist.

[Weather Bureau, Washington, D. C., June 30, 1921.]

Atlantic drainage.—Warnings were issued on May 1 for a moderate flood in the lower Connecticut River on the following day, and a stage of 16.8 feet was reached at 7 p. m., May 2. The nonoccurrence of a flood stage at Holyoke, Mass., was doubtless due to the opening of the floodgates at the dam. No damage occurred.

Heavy rains on May 13 and 14 resulted in a moderate flood in the Santee River, beginning on May 14 and continuing until near the end of the month. Stages were from 1.2 to 1.5 feet above flood-stage with the crest from May 18 to 21, inclusive. Warnings were issued on May 14, and about \$10,000 worth of cattle and hogs were removed from the grazing swamps. No damage was reported.

East Gulf drainage.—The flood in the lower Tombigbee River continued until May 6, with a crest stage at Demopolis, Ala., on May 1 of 50.8 feet, 11.9 feet above the flood stage. The Pearl River flood did not subside until after May 9, while the West Pearl River was in flood until May 17, having been above the flood stage of 13 feet at Pearl River, La., since April 10, a total period of 38 days.

Mississippi drainage.—The crest of the Illinois River flood of April reached Beardstown, Ill., on May 4, with a stage of 14.6 feet, 2.6 feet above the flood stage, and the river remained above 12 feet until and including May 19. This flood was covered in the report for April, 1921. Moderate floods occurred as forecast, around May 10, in the Grand, Osage, and Meramec Rivers of Missouri, and bank-full stages in the Missouri below Lexington, Mo., and the Mississippi River from below Louisiana, Mo., to Alton, Ill. No damage was done.

The Mississippi River at Arkansas City, Ark., reached a crest of 45.4 feet on May 5 and 6 (flood stage 42 feet), falling below the flood stage on May 13. The damage was nominal. The Yazoo River was still above the flood stage of 25 feet at Yazoo City, Miss., at the end of the month, and the crest stage was 30.8 feet from May 10 to 13, inclusive. Damage in the Tallahatchie and Yazoo basins was quite extensive, about 35,000 acres of crops having been flooded while other losses amounted to about \$200,000.

Warnings had been issued from April 26 to 30, inclusive, for the flood in the upper Ouchita River, and at Camden, Ark., the flood stage of 30 feet was passed on April 28, the crest stage of 38.1 feet occurring on May 1, flood stages continuing until May 6. Contrary to the usual procedure at this season of the year, this flood was an exceptional on one account of the rapidity and short duration of the rise and the suddenness with which it ceased. Some slight damage was incurred by farmers who had planted their bottom lands. The Atchafalaya River at Melville, La., was also in moderate flood from May 1 to 21, inclusive.

Warnings of bank-full stages in the lower Kansas River and the Osage River in the vicinity of Ottawa, Kans., on May 10 and 11 were well verified. No material damage was done.

The flood in the lower Black River of Arkansas continued until May 23, and that in the lower White River until May 13.

There were no floods of consequence in the rivers of Texas, and no damage was done.

The rises in the upper Canadian, the Green, Grand, Gunnison, and Colorado Rivers were excellently forecast, especially in the latter river. These floods continued into June and will be discussed at a later date.

The annual rise in the Columbia River and its tributaries began after the middle of the month and continued at the end of the month. These floods were not marked, they also will be discussed at a later date.

Flood stages for month of May, 1921.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
ATLANTIC DRAINAGE.					
<i>Connecticut:</i>	<i>Feet.</i>			<i>Feet.</i>	
Hartford, Conn.....	16	2	3	16.8	2
<i>Santee:</i>					
Rimini, S. C.....	12	14	27	13.5	18-20
Ferguson, S. C.....	12	15	30	13.2	19-21
EAST GULF DRAINAGE.					
<i>Tombigbee:</i>					
Demopolis, Ala.....	39	(*)	6	51.8	1
<i>Pearl:</i>					
Jackson, Miss.....	20	(*)	9	28.1	1
Columbia, Miss.....	18	(*)	9	25.0	1
<i>West Pearl:</i>					
Pearl River, La.....	13	(*)	17	15.9	3,4
MISSISSIPPI DRAINAGE.					
<i>Scioto:</i>					
Larue, Ohio.....	11	(*)	1	11.5	1
<i>Kentucky:</i>					
Jackson, Ky.....	8	6	6	11.5	6
<i>Mississippi:</i>					
Alton, Ill.....	21	14	14	21.1	14
Arkansas City, Ark.....	42	(*)	13	45.4	5,6
<i>Illinois:</i>					
Peru, Ill.....	14	(*)	7	15.0	1
Henry, Ill.....	7	(*)	16	9.2	1
Peoria, Ill.....	16	(*)	7	16.2	1-5
Beardstown, Ill.....	12	(*)	19	14.6	4-6
Pearl, Ill.....	12	(*)	7	12.5	5
St. Charles, Mo.....	25	13	13	25.1	13
<i>Grand:</i>					
Chillicothe, Mo.....	18	13	14	19.2	13,14
<i>Meramec:</i>					
Pacific, Mo.....	11	2	4	11.4	4
	11	11	13	14.0	12
Valley Park, Mo.....	14	3	3	14.0	3
	14	11	13	18.3	13
<i>St. Francis:</i>					
Marked Tree, Ark.....	17	(*)	1	17.0	1
	17	11	16	17.2	12-15
<i>Yazoo:</i>					
Greenwood, Miss.....	36	(*)	6	37.1	1
Yazoo City, Miss.....	25	(*)	(**)	30.8	3,4,10-13
<i>Tallahatchie:</i>					
Swan Lake, Miss.....	25	(*)	17	29.2	1
<i>Ouachita:</i>					
Camden, Ark.....	30	(*)	6	38.1	1
<i>Atchafalaya:</i>					
Melville, La.....	37	(*)	21	37.9	12-15
<i>Smoky Hill:</i>					
Lindsborg, Kans.....	19	10	10	19.6	10
<i>White:</i>					
Newport, Ark.....	26	(*)	5	30.9	1
Georgetown, Ark.....	22	(*)	14	28.0	3
Clarendon, Ark.....	30	5	13	30.8	10
<i>Black:</i>					
Black Rock, Ark.....	14	(*)	23	23.0	4-6
<i>Catche:</i>					
Patterson, Ark.....	9	(*)	18	9.7	12-15
<i>Sulphur:</i>					
Finley, Tex.....	24	(*)	2	25.5	1
Ringo Crossing, Tex.....	20	4	6	22.6	4
<i>Cypress:</i>					
Jefferson, Tex.....	18	2	2	18.8	2
WEST GULF DRAINAGE.					
<i>Sabine:</i>					
Logansport, La.....	25	(*)	14	34.5	1
Bon Well, Tex.....	20	11	18	20.4	12-15
<i>Trinity:</i>					
Liberty, Tex.....	25	(*)	4	26.9	1
	25	17	18	25.1	17,18

* Continued from April.

** Continued into June.

Flood stages for month of May, 1921—Continued.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
WEST GULF DRAINAGE—continued.					
Colorado:	Feet.			Feet.	
Topock, Ariz.	14	12	12	14.4	12
	14	22	26	15.1	24
	14	31	(**)	14.0	31
Grand:					
Fruita, Colo.	12	30	(**)	12.6	31
Eagle:					
Eagle, Colo.	5	30	(**)	5.1	31
Gunnison:					
Sapinero, Colo.	16	29	(**)	17.5	31
Delta, Colo.	9	30	(**)	9.3	30
PACIFIC DRAINAGE.					
Columbia:					
Marous, Wash.	24	22	(**)	28.2	31
Vancouver, Wash.	15	17	(**)	23.7	29, 30
Kootenai:					
Bonniers Ferry, Idaho.	26	25	29	27.4	28
Pend O'Reille:					
Newport, Wash.	16	27	(**)	18.0	31
Clearwater:					
Kamiah, Idaho.	14	18	27	14.7	26
Willamette:					
Portland, Oreg.	15	17	(**)	22.9	29

** Continued into June.

MEAN LAKE LEVELS DURING MAY, 1921.

By UNITED STATES LAKE SURVEY.

[Detroit, Mich., June 6, 1921.]

The following data are reported in the "Notice to Mariners" of the above date:

Data.	Lakes. ¹			
	Superior.	Michigan and Huron.	Erie.	Ontario.
Mean level during May, 1921:				
Above mean sea level at New York.	<i>Feet.</i> 602.12	<i>Feet.</i> 580.58	<i>Feet.</i> 573.09	<i>Feet.</i> 246.68
Above or below—				
Mean stage of April, 1921.	+0.43	+0.24	+0.30	+0.30
Mean stage of May, 1920.	-0.21	-0.16	+0.80	+1.08
Average stage for May, last 10 years.	+0.10	-0.02	+0.39	+0.07
Highest recorded May stage.	-0.93	-2.94	-1.33	-2.27
Lowest recorded May stage.	+1.30	+1.02	+1.78	+1.72
Average relation of the May level to:				
April level.		+0.30	+0.40	+0.30
June level.		-0.30	-0.20	-0.20

¹ Lake St. Clair's level: In May, 575.62 feet.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS—MAY, 1921.

By J. WARREN SMITH, Meteorologist.

[Weather Bureau, Washington, June 23, 1921.]

The first half of May was too cool for proper germination and growth of warm-weather crops in most States east of the Rocky Mountains but the more hardy grains and grasses, in general, made satisfactory progress. By the 10th of the month corn planting was in progress in the Missouri Valley as far north as South Dakota, but much replanting was necessary in many southern localities. After the middle of the month warmer weather prevailed and there was a substantial improvement in the growth of corn, although it continued too dry in portions of the Southwest. At the close of the month planting was in progress well to the northern limits of the country, while the crop was well cultivated in the Southern States.

It was much too cool for cotton also during the first two weeks of the month, while heavy rain occurred from the Mississippi Valley westward during the first decade. It was necessary to replant much cotton and the cool weather prevented satisfactory germination. Under more favorable weather conditions, however, there was a material improvement in this crop during the latter half of the month, although its general condition continued poor in many localities. Planting was nearly completed in the more northwestern portions of the belt by the close of the month.

The weather was generally favorable for winter-grain crops and satisfactory development was reported in nearly all portions of the country, although the sudden reaction to warm weather after the middle of the month was somewhat unfavorable for wheat in some interior sections, while the dry weather in western Kansas was harmful. Conditions were mostly favorable for spring wheat and that crop made satisfactory advancement during the month; the stand and color were mostly good at the close of the month.

The weather was more favorable for spring oats than had prevailed during April and the crop showed improvement in most sections, but continued in unsatisfactory condition in some localities, particularly in the southern Great Plains. It was too dry in the far Southwest, and during part of the month in the Southeast for meadows, pastures, and truck, and there was considerable frost damage to fruit from the upper Mississippi Valley eastward about the middle of the month. The drought was relieved in the Southeastern States by good rains on the 12th-16th, but it continued dry in the far Southwest. Rainfall benefited ranges in the central and northern Rocky Mountain districts and stock continued in generally good condition, except in parts of the Southwest.